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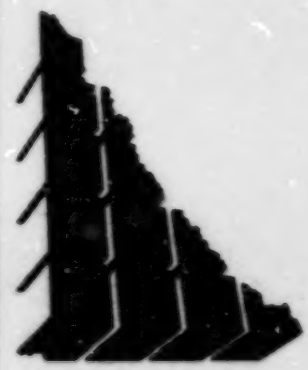

ECONOMIC RESEARCH & PLANNING

DESIRABILITY OF A WINE AN[illegible]

BOTTLE RETURN SYSTEM

FOR THE PURPOSE OF

CONTROLLING LITTER IN YUKON

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SUMMARY

A small proportion of wine and liquor bottles sold in Yukon ends up as litter. The Mayor of Whitehorse has suggested that the Yukon Liquor Board (YLB) institute a bottle return system in order to reduce the extent of the problem.

It is shown in this paper that a bottle return system would be an inefficient method of controlling the litter problem. The system would cost an estimated $415,000 a year without any prospect of recouping the costs of the system through sales of the crushed glass (cullet), or through utilization of the cullet in other government departments. The problem could be handled at a much lower cost if the City of Whitehorse and other communities took on extra staff in the summertime.

The mark-up that would be necessary to recover the costs of a bottle return system would be 51 cents a bottle. For a bottle of wine this would entail a rise in price of over 10%. Such a large increase would be very unfair for individuals and businesses, most of whom already dispose of their bottles responsibly.

However, there are other factors, apart from the litter problem, that could justify the crushing, re-use or recycling of all kinds of metal and glass containers, as well as other materials. These include stimulation of employment, lower cost of living, reduction in imports and less pressure on the capacity of land fill sites. Also, a larger and more comprehensive facility, perhaps run by the Whitehorse City Council might substantially lower the unit costs of crushing/recycling.

It may therefore be worthwhile to undertake a study to determine the costs and benefits of a crushing and/or recycling operation in Whitehorse.

DESIRABILITY OF A WINE AND LIQUOR BOTTLE RETURN SYSTEM FOR THE PURPOSE OF CONTROLLING LITTER IN YUKON

1.0 INTRODUCTION

Economic Research and Planning Branch undertook this study at the request of Dan Lang, the Minister responsible for the Liquor Board, following receipt of a letter from Flo Whyard, Mayor of Whitehorse, requesting the Government of Yukon to include spirits and wine bottles in the ongoing Empty Beer Bottle Return System. The Mayor and City Council believe that such a measure would reduce the amount of unsightly litter in Whitehorse and make the place more attractive for tourists and residents alike.

The object of this report is to discuss the issues associated with the implementation of a wine and liquor bottle return system for the purpose of reducing litter. Section 2.0 provides a description of the problem.

Section 3 describes how the problem has been handled in other jurisdictions, and discusses the desirability of implementing a wine and liquor bottle return system in Yukon for the purpose of reducing litter. Direct financial costs that would be incurred by YLB are calculated, and methods of recouping the costs are reviewed. The cost effectiveness of the system and possible alternatives are discussed. The fairness of such a system is analyzed. Finally, health and safety issues are considered.

Section 4 considers the desirability of instituting a return system for not only glass, but any kind of waste. Avenues for further study are suggested. Section 5 provides an outline of conclusions and recommendations.

2.0 THE PROBLEM:

A small percentage of the 800,000-odd wine and liquor bottles sold in Yukon each year end up as litter. The City of Whitehorse believes litter is a serious problem and should be corrected by government. This litter is an eyesore, particularly in the Rotary Park area, and creates a bad impression to tourists. Broken glass is also dangerous, particularly for young children playing in Rotary Park. The Mayor of Whitehorse wrote to the Minister responsible for the Liquor Board on May 27th, 1983, requesting the Government to investigate the situation and institute a bottle return system for wine and liquor bottles.

The number of bottles sold that end up as litter is not known with precision. An approximate estimate of the maximum probable percentage can however be derived. YLB estimates that 50% of its sales of wine and liquor are sold to restaurants and bars. It can safely be assumed that this category disposes of empty bottles responsibly. The other 50% of sales are to individuals. One would expect that the majority of individuals also dispose of their bottles responsibly. Therefore, at the very outside 200,000 wine and liquor bottles may be littered each year in Yukon. The actual number is probably much lower.

3.0 DESIRABILITY OF A WINE AND LIQUOR BOTTLE RETURN SYSTEM IN YUKON

It is instructive to examine how other jurisdictions have handled the litter problem. Economic Research and Planning looked across Canada and found that the only Canadian jurisdiction that has a legislated bottle return system primarily for the purpose of handling the litter problem is Alberta. This system covers all kinds of glass and metal beverage containers, including wine and liquor bottles. Under this system, the public returns the empties to privately run depots and receives a refund of its deposit. An agent of the Alberta Liquor Board or the soft drink companies picks up the empties and reimburses the depot operator, and pays him a handling commission. Many of the soft drink bottles are refilled. However, refilling of wine and liquor bottles is illegal under the Food and Drug Act. These bottles are instead sold for recycling.

The system has had considerable success in reducing environmental pollution. However, as far as the Alberta Liquor Control Board (ALCB) is concerned, there have been serious shortcomings. First of all, the costs of the system have reduced ALCB's net revenues by $2.5 million a year. With annual net revenues of $475 million a year this may not seem much of a problem. However in 1982 ALCB decided it no longer wanted to absorb the burden and slapped on a 15 cents a bottle surcharge to cover the costs of the system and to recover past losses. By the end of 1984 the surcharge will be 25 cents a bottle.

A second problem concerns audit and control. The depots are operated by private entrepreneurs. Pick-up from the depots and disposal is also handled by private operators. The ALCB's opinion is that this has resulted in control and audit difficulties. In the Yukon, for example if a private operation collected the bottles and disposed of them at the dump, it could conceivably charge YLB for more bottles than it had actually received.

Measures to promote return, re-use and recycling of bottles and cans have also been instituted in other provinces. However these measures are not so much aimed at reducing the litter problem as at promoting energy conservation, stimulating employment, reducing the cost of living, and reducing the pressure on renewable and non-renewable resources.

British Columbia has mandatory deposits on all beer, and soft drink glass and metal containers. Saskatchewan has banned the sale of non-refillables throughout most of the Province. Ontario has banned non-refillable bottles, and has required stores to stock soft drinks in refillable containers if they are also sold in non-refillable cans. Only Alberta has a deposit return system for wine and liquor bottles.

There is no legislated bottle return system in Yukon. However, there are three retail outlets in Whitehorse that operate a return and refill system for soft drink bottles. This system is described in more detail in the Appendix.

Because of the control problem, YLB has indicated that any return system would have to be operated directly by them. Discussions with YLB indicated that a bottle return system would imply the following parameters:

- capital costs are written off after five years for machinery and 25 years for the warehouse. A 10% real rate of interest is assumed;

- five medium-sized crushers at $50,000 a crusher would be needed in the outlying communities. Annualized costs are $63,450 (that is, annual capital repayment and interest costs);

- two large crushers at $75,000 a crusher would be needed in Whitehorse. (There is a crusher at present for imported beer bottles. However, its design and capacity are not suited for large numbers of wine and liquor bottles). Annualized costs are $38,000;

- extra warehouse area of 5,000 sq. ft. at $75 a sq. ft. would be necessary in Whitehorse to house the crushers and empty bottles. Annualized costs are $40,000 a year;

- annual sales of wine and liquor totalling 810,000 bottles;

- 100% of bottles are returned (99% of beer bottles are returned at present);

- transport of crushed glass to community and city dumps would cost $18,000 a year. A private company would be contracted to do this. (Costs based on present costs of transporting 30,000 dozen crushed imported beer bottles a year to dumps);

- ten extra employees would need to be hired for handling and crushing and running the accounting side of the operation. Five of these employees would be located in the outlying communities. Assuming an accountant would cost $30,000 a year, and the other staff $25,000 a year, extra employee costs would be $255,000 a year.

Annual costs of a bottle return system are shown in the following table, in $1983.

ANNUAL COSTS OF A WINE AND LIQUOR BOTTLE RETURN SYSTEM

	Annual Costs ($1983)	
5 medium-sized crushers	$63,450	
2 large crushers	38,000	
Warehouse	40,000	
Transport to Dump	18,000	
Extra Manpower	255,000	
	$414,450	say $415,000.

A 10% real interest rate may seem high given that rates have generally been falling over the past year. However, use of a lower rate would make little difference to the analysis. If a real interest rate of 7½% was used the annual costs would be $402,000.

If the YLB did not want to lose 10% of its annual profits, it would either have to try to sell the glass, or add a mark-up on the price of wine and liquor, or raise taxes.

The crushed glass (cullet) could be sold for recycling as happens in Alberta. Possible products include low quality glass and fibreglass. The cullet would have to be trucked to Alberta, where the nearest recycling operation to Whitehorse is located. The total weight of wine and liquor bottles returned to YLB would be around 970,000 pounds (using ALCB figures, one bottle weighs 1.2 pounds). To break even on the operation, YLB would have to sell

cullet for 48 cents a pound, including 5 cents for transportation. The price that ALCB receives for cullet is 1.6 cents a pound. It is clear, therefore, that YLB would come nowhere near to recouping the costs of the system by selling its cullet. Even if the objective was to recoup at least a portion of the costs, it would still not be worthwhile to truck the cullet to Alberta as the freight costs would be greater than the revenue received. Even if there was a recycling plant in Whitehorse it is obvious that it would pay far less for cullet than YLB would need in order to break even. Cullet can sometimes be used with no or very little extra processing. One interesting use is in highway maintenance and construction when it is mixed with asphalt. However, the amount of cullet that could be produced in Yukon each year would be too small to be of significant use to Highways personnel. The cost savings are also unlikely to be significant.

Under a mark-up system, YLB would have to charge at least 51 cents a bottle to recoup all costs. For a bottle of wine this would entail a rise in price of over 10%. By way of comparison the mark-up in Alberta is only 5%, which, moreover, includes a substantial profit margin for ALCB. If ALCB merely wanted to break even they would only have to charge a mark-up of 2% on a wine bottle. The reason of course, for the much smaller mark-up in Alberta, is that the fixed costs of the return system are spread over a much larger number of bottles than would be the case in Yukon.

Based upon the costs calculated above and the possible methods for recouping the costs, a bottle return system for the purpose of reducing litter would be undesirable for a number of reasons:

(a) <u>Cost-effectiveness</u>

The question is whether there is a less costly way of clearing up 200,000 (at the most) littered wine and liquor bottles.

Economic Research and Planning believes that a far more cost-effective method of cleaning up the litter would be to enforce the Litter Act more rigorously. The Whitehorse City Council could hire one or two people just for the summer months (when the litter problem is most serious) to patrol known trouble spots and pick up litter, particularly in Rotary Park. Their status could be equivalent to that of traffic wardens. Their task would be much easier now that Rotary Park is an official no drinking zone. The cost would be around $50,000 a year, which is only one-eighth of the cost of a bottle return system. Even if more people had to be hired, it is unlikely that the total cost would be any more than $100,000. This is still only one quarter of the cost of a bottle return system. A further advantage of this alternative is that the employees could pick up other kinds of litter, such as soft drink bottles, and plastic bags and bottles.

Alternatively, the City Council could pay the RCMP to make available the manpower to patrol the known litter areas.

Another option would be for the City Council, possibly in conjunction with YTG, to explore more economical ways of crushing, recycling or re-using waste glass (and tin cans). The Industrial and Regional Development Program (IRDP) administered by DREE-ITC, may provide funds for feasibility studies. If the results of the studies are positive, the City Council could set up a small depot to receive waste glass and cans, and pay a few cents per bottle or can received.

Although it seems unlikely that a City run crushing and/or recycling plant would be economical, given the high costs of the crushing facility outlined above, it may be the case that a more comprehensive facility than that envisaged by YLB would lower unit costs. As discussed in Section 4, such a facility may have a number of other benefits, apart from the reduction of litter, that may also help to justify such a facility.

(b) Equity

Paying for a bottle return system, through either a mark-up or increased taxes would penalize unfairly the majority of people who already dispose of their bottles responsibly. Moreover, people would have to go to extra effort to separate bottles from the rest of their garbage and return them to the liquor store.

A mark-up system would be particularly unfair to hotel and restaurant owners. Higher prices mean that more people would purchase liquor direct from YLB. Business would therefore be taken away from hotels and restaurants. There is already a trend towards increasing sales through YLB outlets at the expense of restaurants and hotels. Charging a mark-up would make life even harder for them. The health of the restaurant and hotel industry is vital for the health of the tourism industry, currently Yukon's number one industry. It would seem foolish to jeopardize this.

Even if a mark-up system was not used to recoup the costs, the charging of a deposit on bottles would mean that hotel and restaurant owners would have to carry a higher value of stock. Their cash flow would be negatively affected.

If a mark-up was not charged, or extra taxes levied, it would be unfair to force the YLB to take a major reduction in profits. Charging a mark-up might still reduce profits, as the 10% increase in the price of wine that would be needed to recover costs could lead to consumer resistance and a decrease in sales.

(c) Health and Safety Factors

There would inevitably be a delay between the receipt of the bottles and crushing, as it would not be efficient to run the crushers until a reasonably large load had accumulated. As such the presence of empty, unwashed wine and liquor bottles would create a health problem (smell and flies). The noise of the crusher would create discomfort for YLB employees.

Finally, wine and liquor bottles are much harder to stack than beer bottles. The bottles are much thinner than beer bottles and are far more susceptible to inadvertent breakage. This would constitute a significant safety problem.

4.0 OTHER CONSIDERATIONS:

Even if the wine bottle return system outlined in Section 3 is not justifiable, it may still be useful to pursue further the economics of crushing, recycling and re-using materials, covering not only glassware, but also paper, plastic, cardboard, metal containers etc.First, a larger and more comprehensive facility and/or different technologies and organizational systems could perhaps substantially reduce the unit cost of crushing. Second, there are several other benefits accruing from crushing, recycling and re-using materials apart from the reduction of litter. These are:

(a) a recycling industry in Yukon would reduce leakages from the economy in the way of imports and stimulate local employment and value added;

(b) recycled or re-used paper, metal or glass could lead to a lower cost of living than if people bought new products all the time. In particular, the re-use of refillable bottles, provided there was a high return rate, could lead to lower beverage costs. It is noteworthy that Whitehorse Beverages, the Pop Shop and Pic-a-Pop accept used soft drink bottles. Whitehorse Beverages (Coca-Cola) has a bottling plant here also;

(c) community dumps would be filled up less quickly, and the day when a new dump would have to be established at great expense could be postponed;

(d) the litter problem would be more effectively dealt with than by concentrating only on wine and liquor bottles.

(e) Yukon would be contributing towards energy conservation in Canada. Re-using and recycling materials uses less energy than creating new materials;

(f) re-using and recycling diminishes pressure on renewable resources, particularly forests, and mineral resources.

As referred to earlier, other provinces have such recycling and re-use programs.

5.0 CONCLUSIONS AND RECOMMENDATIONS:

On the basis of this investigation the following conclusions and recommendations are outlined:

(a) Conclusions

It is estimated that a wine and liquor bottle return system would have an annual cost of between $400,000 and $415,000. There is no prospect at present of recovery of the costs through re-use or recycling of the crushed glass into other materials, e.g. fibreglass or glassphalt. There is no recycling plant in Yukon and the viability of one has yet to be demonstrated.

A far more cost-effective way of reducing the litter problem would be for the City of Whitehorse to hire a few people in the summer to help enforce the Litter Act. This would cost around $50,000 a year, versus $415,000 under the proposed system.

Another less costly alternative would be to pay the RCMP to institute more patrols.

It would be unfair to make individuals and businesses pay for the costs of a bottle return system either through increased taxes or a mark-up on the price of wine and liquor, as most of these already dispose of bottles responsibly.

Apart from reducing the litter problem, there are other reasons, such as stimulation of employment and reduction of imports, why government might want to consider promoting the return, re-use or recycling of not only liquor and wine bottles, but also soft drink bottles, metal containers, and plastics and paper. Also a more comprehensive crushing/recycling facility could lead to lower unit costs than is possible under the system envisaged by YLB. These are matters worthy of further investigation by government.

APPENDIX

PRESENT SOFT DRINK BOTTLE RETURN SYSTEM IN YUKON

At present there are three retail outlets that accept the return of soft-drink bottles.

(a) Whitehorse Beverages

This company operates the only bottling plant in Yukon. It bottles Coke, Canada Dry and "Pop Shop" bottles.

Whitehorse Beverages used to have a deposit system for bottles. It stopped operating it for a number of reasons. First, its main competitor, Pepsi, used non-returnable, non-refillable bottles. Even if the price net of the deposit was the same, the non-returnable system was less work for people. Second, the maximum amount of deposit that could be charged without losing customers (around 25 cents a bottle), was substantially less than the true cost per bottle (60 cents). If not all the bottles were returned, they would have to be replaced at a much greater cost than what they sold for. This was a particular problem in Yukon where thousands of tourists might buy Coke but not finish the bottles until after they had reached Alaska. Third, stores such as Supervalue found the deposit system to be an accounting burden.

Whitehorse Beverages has instead instituted a "returnable" system whereby people are paid 20 cents for every bottle they bring directly to the company's premises. The bottles are then re-used. Whitehorse Beverages is not supposed to do this as the bottles are supposedly non-refillable. However, Whitehorse Beverages claims this is cheaper than bringing new bottles up from the south.

(b) Pop Shop

This is a small operation run by Glen Darling. Customers pay a deposit which is refundable upon return of the bottle. Whitehorse Beverages has been bottling much of the Pop Shop's beverages.

(c) Pic-a-Pop (Yukon Appliances)

This is also a deposit system. Unlike the Pop Shop, however, the bottles are sent outside for refilling. Whitehorse Beverages would like to obtain its business. It claims that with transportation costs it is more expensive to bottle outside than in Yukon.

POOR

QUALITY

ORIGINAL